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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/633,857	08/07/2000	David C. Ahlgren	FIS9-2000-0149US1	3316

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EXAMINER

KUNEMUND, ROBERT M

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 02/07/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

ASH

Office Action Summary

Application No.

09/633,857

Applicant(s)

AHLGREN ET AL.

Examiner

Robert M Kunemund

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-11 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-11 and 13-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claims 1, 3 to 11 and 13 to 20 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support in the instant specification for the amendment to the claims concerning gas flows. The specification teaches only two gas flows in figure 4, not two of more as is now claimed. Further, the specification teaches that figure 4 is an entire process and not multiple processes. Thus one cannot remove certain regions of the figure.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3 to 11 and 13 to 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are indefinite for failing to particularly point out and distinctly claim the instant invention. It is unclear to one of ordinary skill in the art as to when to use particular regions of figure 4 when growing a layer. Further, the figure does not show a third gas flow, which the claims encompass.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3, 4, 6 to 8, 11, 13, 14 and 16 to 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishizawa et al in view of Maley et al and Abelson et al.

The Nishizawa et al reference teaches a method and apparatus for the controlled growth of silicon. A substrate is placed in a chamber and heated to deposition temperatures. Source gases are flowed in the direction of the substrate and over the substrate to create a layer. There is a means to monitor the growth and feed the data to a controller, which changes flow rates, note entire reference. The sole difference between the instant claims and the prior art is the monitoring of the hydrogen partial pressures. However, the Maley et al and Abelson et al references teach monitoring hydrogen partial pressures during deposition and using the data to control of growth, note abstracts. It would have been obvious to one of ordinary skill in the art to modify the Nishizawa et al reference by the teachings of the Maley et al and Abelson et al references to monitor hydrogen partial pressures in order to enhance control over the growth of the layer even to the single layer level.

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Claims 5, 9, 10, 15, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishizawa et al in view of Maley et al, Abelson et al. and Dubbelday et al.

The Nishizawa et al ,Maley et al., and Abelson et al. references are relied on for the same reasons as stated, supra, and differ from the instant claims in the growth of SiGe. The Dubbelday et al reference teaches growing SiGe layers, note col. 2. It would have been obvious to one of ordinary skill in the art to modify the Nishizawa et al reference by the teachings of the Dubbelday et al reference to deposit SiGe in order to increase the quality of the layer.

Response to Applicants' Arguments

Applicant's arguments filed December 4, 2002 have been fully considered but they are not persuasive.

Applicants' argument concerning the monitoring is noted. However, the Nishizawa et al reference teaches that the monitoring can be done in real time and the results are then read into the control loop to allow for further control of the deposition. Further, the reference does show flows, which are constant as shown in some of the flows shown in the regions of figure 4 claimed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M Kunemund whose telephone number is 703-308-1091. The examiner can normally be reached on 8 hours.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ben Utech can be reached on 703-308-3636. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-305-3599 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

RMK
January 31, 2003



**ROBERT KUNEMUND
PRIMARY EXAMINER**